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(54) **DRINKING VESSEL SUITABLE FOR USE AS A TRAINER CUP OR THE LIKE**

TRINKGEFÄSS GEIGNET ZUR VERWENDUNG ALS SCHNABELTASSE ODER DERGLEICHEN  
RECIPIENT POUVANT ETRE UTILISE COMME Gobelet à bec pour bébé, ou autre

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<b>US-A- 3 650 271</b>	<b>US-A- 5 079 013</b>

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**EP 0 634 922 B1**

## Description

This invention relates to drinking vessels and more particularly to drinking vessels suitable for use as a trainer cup or the like.

Trainer cups (that is a cup or mug provided with a lid having a mouthpiece - usually a spout - associated therewith) are well known and have been designed to bridge the gap between use of a baby's feeding bottle and use of a normal cup or glass by a young child. Such a trainer cup will often be a child's first step in learning to feed itself. As this period in a child's development will usually coincide with the cutting of its first teeth, quite apart from the child's inherent difficulty in handling what is new to it which may lead to the cup inadvertently being knocked over, the irritability characteristic of teething allied with the natural exuberance of young children tends to exacerbate what is frequently a noisy and messy experience.

The existence of the lid may reduce or at least delay the effect of knocking the cup over, but will not deter a child from shaking the cup violently up and down. Neither will the lid delay spillage for very long if the cup is knocked over.

Belanger in US Patent 5 079 013 proposes an essentially dripless feeder cup. Liquid can only be obtained through the mouthpiece opening by sucking. The arrangement proposed by Belanger is complicated in construction including a number of separately assembled and separately movable parts including a ball valve 36 controlling the air inlet to the interior of the trainer cup and a liquid outlet control valve means which comprises a valve housing in which a valve body means is longitudinally slidable under the control of a separate coil spring 40 around its stem to open and close a valve opening. The arrangement is such that upon sucking at the mouthpiece to create a predetermined difference in pressure between the exterior of the mouthpiece and the interior of the training feeding container, the valve body with its longitudinal valve stem will slide axially of the valve housing to open to allow liquid to leave the interior of the container. The number of separately formed and separately movable parts requiring several assembly steps meaning that the construction illustrated in US Patent 5 079 013 will be relatively expensive.

In the somewhat different field of babies' feeding bottles, I have myself designed arrangements in which a valve interrupts the flow of fluid from the interior of the bottle through a teat or similar mouthpiece (see for example, my British Patent Specifications Nos: 2 131 301 and 2 169 210). Bottles to my design have achieved some commercial success, particularly in the rather specialized field of feeding of babies with sucking problems. Other arrangements proposing valved feeding bottles such as US Patents 4 135 513, 3 704 803 and 4 339 046 and UK Patents 460 274 and 1 253 398 have been proposed in the patent literature, but I am not

aware that any of these proposals have proved of practical utility. It is clear that there have been a series of proposals by different workers for the valving of babies' feeding bottles. So far as I am aware, the only practical arrangement which has proved of any long term success has been my own proposal for babies' feeding bottles. It will be seen that in those proposals, the valve means consists of a simple slit valve.

As will become clear from the detailed description below, if slit valve of the kind known *per se*, but in a different field, in my feeding bottle designs are applied to an otherwise essentially conventional trainer cup, this overcomes the disadvantages both of standard trainer cups without any form of valving and also the problems inherent in the arrangement of US Patent 5 079 013, namely that the design is too complex and too expensive for construction for standard trainer cups to be a technical and commercial success. It will thus become clear from the detailed description below of embodiments of training cup or the like constructed in accordance with my present invention, that the present invention enables the ready production of practical embodiments of trainer cup which neatly and effectively overcome the problems of accidental spillage or of child-generated deliberate attempts at spilling the contents of the trainer cup. Moreover, my practical embodiments achieve this desirable end in simple, neat constructions which are cheap and simple to manufacture and facilitate easy cleaning. My trainer cups have no separately movable parts.

EF-A-0 326 743 of Coy proposes a container with a closure lid provided with a slit valve and adapted for use in the so-called fast food industries. Coy provides an arrangement in which the container is prevented from opening to allow fluid exit except under circumstances where someone is actually drinking. It is an essential requirement of Coy's valve that it should only open by the application of a significant force laterally. This can be provided by deliberate sideways pressure on the mouthpiece to open his valve so that liquid can then pour or be drawn out. Unless this sideways pressure is provided, Coy's slit valve remains firmly shut even if the container is overturned.

According to a first aspect of my invention, I provide a drinking vessel suitable for use as a trainer cup or the like, comprising: an open-mouthed generally cup-shaped container; (2, 2', 60, 54); a lid (5, 5', 31, 31', 61, 49) for the open mouth of said cup-shaped container, the lid (5, 5', 31, 31', 61, 49) having a mouthpiece (6, 32, 45, 51) associated therewith; and valve means (1, 1', 31, 31', 42, 58) associated with the lid and adapted to prevent flow of liquid from the interior of the container through the mouthpiece and to enable a user to draw liquid through the mouthpiece, the configuration of the valve means (1, 1', 31, 31', 42, 58) being such that said valve means is adapted to open upon no more than a predetermined difference of pressure, greater within the vessel than outside, being present across the said

valve, whereby said valve means (1, 1', 31, 31', 42, 58) prevents flow from the interior unless a predetermined level of suction is applied to the mouthpiece, and a user is enabled to draw liquid through the mouthpiece (6, 32, 45, 51) by the sole application of suction thereto to provide said difference of pressure; characterised in that said valve means (1, 1', 31, 31', 42, 58) comprises a self-closing slit valve (18, 35, 58).

The valve may be a separate valve member located in use between the container and the lid. Alternatively the valve may be integrally formed with the lid.

Suitably the lid is apertured to allow for the ingress of air to make up for the liquid sucked via the valve through the mouthpiece. To prevent the possibility of liquid issuing through this aperture, that is also suitably provided with a valve, preferably a non-return valve allowing flow of air from the exterior into the container but preventing flow of liquid from the interior of the container outwardly through the aperture.

Conveniently the two valves are provided by a single valve member which may be attached to the lid. The valve member may comprise a single piece of latex, silicone rubber, plastics or other suitable flexible material integrally moulded with two valves, one adapted to underlie the lid in the region of the mouthpiece and the other underlying the aperture. The two valves may comprise dome-shaped regions, the larger underlying the lid in the region of the mouthpiece and being concave towards the interior of the container, and the smaller underlying the aperture and being convex towards the interior. These dome-shaped regions are provided with a simple slit or cross-cut which in effect is self-closing, in each case the slit or cross-cut allowing flow from the concave to the convex side but not in the reverse direction. The valve member may be held in place between the lid and a valve member support plate.

In an alternative arrangement in which the valve is integrally formed with the lid, the lid itself may be made of a material listed above as a candidate for the separate valve member. The exit valve may comprise several dome-shaped regions, each with a slit or cross-cut, at the extreme end of the mouthpiece. Alternatively, the extreme end of the mouthpiece may be flat and provided with a slit or cross-cut. The inlet valve may comprise a dome-shaped region convex towards the interior of the container with a slit or cross-cut exactly as described above for the separate valve member.

The lid may also have an inner ring spaced from the skirt to provide a channel in which the rim of the container fits to more firmly secure the lid onto the container.

In a further alternative arrangement, the mouthpiece and the valve member are integrally formed and the lid is provided with at least one aperture to allow the mouthpiece to be pushed up through the lid. The mouthpiece/valve member may be of latex, silicone rubber, plastics or other suitable flexible material. The lid may have a second smaller aperture to allow the ingress of

air and this aperture is also suitably valved. Alternatively, the second aperture is provided on the mouthpiece. The mouthpiece has a straight-sided portion so that a child sucking on the mouthpiece will not interfere with the ingress of air through this aperture. The aperture may be valved, the valve comprising a dome-shaped region convex towards the interior of the container-mouthpiece having a slit or cross cut.

According to a second and alternative aspect of my invention, I provide a drinking vessel suitable for use as a trainer cup or the like, comprising: an open-mounted generally cup-shaped container; a lid for the open-mouth of said cup-shaped container, the lid having a mouthpiece associated therewith; and valve means associated with the lid and adapted to prevent flow of liquid from the interior of the container through the mouthpiece and to enable a user to draw liquid through the mouthpiece; the valve means being adapted to open upon no more than a predetermined difference of pressure, greater within the vessel than outside, being present across said valve, whereby said valve means prevents flow from the interior unless a predetermined level of suction is applied to the mouthpiece, and a user is enabled to draw liquid through the mouthpiece by the application of suction thereto to provide said difference of pressure; characterised in that the lid has an aperture therethrough and a separate mouthpiece formed of a flexible material, and having a circumextending flange, mounted at said aperture so that a distal portion thereof protrudes outwardly of said lid, the extreme end of said mouthpiece being provided with a self-closing slit valve providing said valve means.

As will be appreciated, not only young children may have a feeding problem with liquids. The term "trainer cup or the like" is accordingly intended herein to encompass cups having the features identified, whether intended for use by a young child or alternatively, for example by the infirm or senile.

The invention is hereinafter more particularly described by way of example only with reference to the accompanying drawings in which:

Fig. 1 is a sectional view through an embodiment of trainer cup or the like constructed in accordance with the present invention;

Fig. 2 is a plan view of the valve assembly of the trainer cup of Fig. 1;

Fig 3 is a sectional view taken along the line III-III in Fig. 1;

Fig. 4 is a sectional view through an alternative embodiment of trainer cup or the like also constructed in accordance with the present invention; Fig. 5 is a plan view of the lid of the trainer cup of Fig. 4;

Fig 6 is a plan view of the valve assembly of the trainer cup of Fig. 4;

Fig. 7 is a sectional view taken along the line VII-VII in Fig. 6;

Fig. 8 is a plan view of a valve member support plate of the trainer cup of Fig. 4;

Fig. 9 is a sectional view taken along the line IX-IX in Fig. 8;

Fig. 10 is a sectional view through a further alternative embodiment of trainer cup or the like also constructed in accordance with the present invention; and

Fig. 11 is a plan view of the lid of the trainer cup of Fig. 10.

Fig. 12 is a sectional view through a further alternative embodiment of trainer cup constructed in accordance with the present invention;

Fig. 13 is a sectional view through a yet further alternative embodiment of trainer cup constructed in accordance with the present invention;

Fig. 14 is a plan view of the valve and mouthpiece assembly of the trainer cup of Fig. 13; and

Fig. 15 is a sectional view through a further alternative embodiment of trainer cup also constructed in accordance with the present invention.

The trainer cup illustrated in Figs. 1 and 3 is, apart from the addition of the valve assembly 1 described in more detail hereinbelow and illustrated in Fig. 2, generally conventional. It comprises a generally cup-shaped container 2 having a bottom 3 and an upstanding cylindrical wall 4 terminating in an open mouth. Across the open mouth is a lid generally indicated 5. The lid 5 has a mouthpiece 6 associated with it. In this case the mouthpiece comprises a spout 7 integrally formed with the lid and having an opening 8. Figs 4 and 5 show an alternative spout 7' which has a number of small openings 26. Other arrangements are feasible. In particular, a tube or straw could be received in a gland provided in the lid. The lid 5 includes a skirt 9 the internal diameter of which is just slightly less than the external diameter of the container so that the skirt 9 forms a tight fit with the container when the lid is fitted over the open mouth.

Valve assembly 1 is located in use between the container 2 and the lid 5 and, as will be explained below, serves to prevent flow of liquid from the interior of the container 2 through the spout 7 of mouthpiece 6 unless suction is applied at the opening 8 to the spout. As can best be seen from Figs. 1 and 2, the valve assembly comprises a generally disc-shaped member 10 which is suitably moulded from latex, silicone rubber, or other suitable plastics material. Member 10 is fitted to the lid 5 by means of a central boss 11 which is received in a corresponding opening 12 in the centre of the lid. In an alternative arrangement, the boss may be integrally formed with the lid, and the valve assembly 1 is provided with a central opening for receiving the boss on the lid. Although member 10 may be permanently fitted to the lid, for ease in cleaning, the member is suitably detachable from the lid by removal of boss 11 from opening 12. Around its periphery 13 the valve assembly disc member 10 is provided with an integral lip or thick-

ened region in the form of a ring. This not only provides for strength at the edge but provides a region which, since the disc is given a diameter greater than the interior diameter of the lid results in compression at the edge so that the valve assembly disc member provides a sealing effect around its periphery in effect between the lid and the container serving to additionally reduce the likelihood of spillage by leakage between the container and its lid. The disc 10 is provided with two dome-shaped regions 14 and 15. The larger of these is positioned to underlie the mouthpiece 6 and to be concave towards the interior of the container in use. The smaller of the two dome-shaped regions has the opposite configuration and is provided for a purpose to be explained below. Each dome-shaped region is provided with a slit or cross-cut partially thereacross.

Lid 5 is apertured at 16 to provide for ingress of air into the container as liquid is sucked out through the spout 7 of mouthpiece 6. The smaller dome 15 underlies aperture 16 in use and allows flow of air from the exterior through the slit 17 and into the interior of the container, but only when the pressure within the container is sub-atmospheric through suction applied to mouthpiece 6. The slit is in effect a self-closing non-return valve so that liquid within the container is prevented from exit via the slit and aperture 16. Slit 18 in the larger dome 14 is also self-closing. In other words, unless suction is applied to the opening 8 of spout 7, liquid within the container will not pass through the slit. Consequently, if a container with liquid therewithin is simply shaken up and down or is accidentally spilt, firstly, fluid cannot pass through slit 17 and aperture 16 and secondly, cannot pass through slit 18 into the mouthpiece. The sealing at the periphery tends additionally to prevent the possibility of leakage between the lid and the container.

The trainer cup illustrated in Fig. 4 is similar to that illustrated in Fig. 1, comprising cup-shaped container 2', valve assembly 1' and lid 5'. The valve assembly 1' is shown with the thickened lip 19 forming a sealing ring. Additionally, the trainer cup is provided with a valve member support plate 20, which underlies the valve assembly 1'. It is provided with openings 21 and 22 corresponding to the dome-shaped regions 14' and 15' of the valve assembly 1'. The plate 20 has a central boss 23 which passes through an opening 24 of the valve assembly 1' and an opening 25 of the lid 5'.

Valve assembly 1' and lid 5' are assembled as before. The plate 20 holds valve assembly 1' against the lid and is attached to the lid by means of boss 23 being fitted through openings 24 and 25. The valves are unimpaired by retainer 20, opening 21 underlying the larger dome-shaped region 14' and opening 22 underlying the smaller dome-shaped region 15'.

Figure 10 illustrates an alternative arrangement in which the valve assembly is integrally formed with the lid. A cup-shaped container 30 has a lid 31. Lid 31 is provided with a mouthpiece 32 in the form of a spout 33.

The spout is integrally formed with a number of dome-shaped regions 34 concave toward the interior of the container in use, and each provided with a slit or cross-cut 35. In an alternative arrangement the extreme end of the mouthpiece may be flat and provided with a slit or cross-cut. The lid is integrally formed with a further dome-shaped region 36, of the opposite configuration to dome-shaped region 34, and also provided with a slit or cross-cut 37. In use lip pressure and suction applied at the spout 33 opens the slits 35 allowing flow of liquid out of the container. Slit 37 also opens allowing ingress of air in to the container. The slits again have the effect of being self-closing non-return valves. The lid 31 with integrally formed valve assembly may be moulded from similar materials to those used for moulding the valve assembly 1.

Figure 12 illustrates a similar arrangement to that of Figure 10 but with the additional feature of a ring 38 inwards of the skirt 39 of the lid 31'. This ring 38 together with the skirt 39 forms a groove 40 into which the rim 41 of container 30' fits, to provide a tighter seal.

In the alternative arrangement of Fig. 13, container 60 is provided with lid 61 and a combined mouthpiece and valve member 42. Lid 61 is provided with two apertures 43 and 44. Aperture 43 allows for the ingress of air while aperture 44 is large enough to allow the mouthpiece 45 to fit within this aperture. A slit valve is provided on the mouthpiece. Valve means 46 comprising a dome-shaped region provided with a slit or cross-cut 47 underlies the aperture 43. The rim 48 of the member 42 is thickened to provide a good seal.

In a further alternative arrangement illustrated schematically in Figure 15, lid 49 is also provided with aperture 50, large enough to accommodate mouthpiece 51. The mouthpiece 51 in this case is formed from flexible material, for example, latex or silicone rubber and has a flange 52, and so has a configuration corresponding to that of a conventional feeding bottle teat. Flange 52 may be press-fitted over disc 53 of lid 49 prior to attaching the lid 49 to container 54. Mouthpiece 51 comprises a spout portion 55 and a straight sided section 56. Straight sided section 56 is provided with valve means 57 in the form of a dome-shaped region convex towards the container and provided with a slit to allow for the ingress of air into the container 54 as fluid is sucked out through spout region 55. Spout 55 is provided with a slit valve 58 which controls flow from the trainer cup. The application of suction alone to the mouthpiece is sufficient to open the otherwise closed slit valve 58 to allow liquid from the trainer cup. In the absence of suction liquid is effectively prevented from leaving the cup. The teat-configuration mouthpiece of this embodiment may be readily replaceable.

I have found in practice that although practical embodiments of a trainer cup according to my design are very effective in preventing deliberate or accidental spillage in this fashion, they have no significant effect in reducing the ability of a child to drink from the cup by

sucking on the spout. I have also found that cups to my design can readily be employed by the relatively infirm or by the senile. With this view, the container is provided with a pair of opposed handles 59 which can readily be grasped by a young child or by an arthritic aged person.

As compared with conventional trainer cups, the only additional expense in cups to my design is the additional cost of the valve assembly 1, and optionally the valve assembly support plate, or alternatively the substitution of the one-piece lid and valve assembly of Fig. 11 for a conventional trainer cup lid. As the valve assembly or one-piece lid and valve assembly would be simple one-piece mouldings, the additional cost is negligible. Assembly is simple since, e.g. the boss 11 in the Fig. 1 embodiment simply needs to be pushed into opening 12. Cups to my design are accordingly cheap and simple to manufacture and are adapted for ready use by ordinary members of the public or, for example, in a children's home or an old people's home, being easy to clean as the parts are readily separable.

#### Claims

1. A drinking vessel suitable for use as a trainer cup or the like, comprising: an open-mouthed generally cup-shaped container; (2, 2', 60, 54); a lid (5, 5', 31, 31', 61, 49) for the open mouth of said cup-shaped container, the lid (5, 5', 31, 31', 61, 49) having a mouthpiece (6, 32, 45, 51) associated therewith; and valve means (1, 1', 31, 31', 42, 58) associated with the lid and adapted to prevent flow of liquid from the interior of the container through the mouthpiece and to enable a user to draw liquid through the mouthpiece, the configuration of the valve means (1, 1', 31, 31', 42, 58) being such that said valve means is adapted to open upon no more than a predetermined difference of pressure, greater within the vessel than outside, being present across the said valve, whereby said valve means (1, 1', 31, 31', 42, 58) prevents flow from the interior unless a predetermined level of suction is applied to the mouthpiece, and a user is enabled to draw liquid through the mouthpiece (6, 32, 45, 51) by the sole application of suction thereto to provide said difference of pressure; characterised in that said valve means (1, 1', 31, 31', 42, 58) comprises a self-closing slit valve (18, 35, 58).
2. A drinking vessel according to Claim 1, further characterised in that said valve means (1, 1', 42) is a separate valve member (10, 10', 42) located in use between the cup-shaped container (2, 2', 60) and the lid (5, 5', 61).
3. A drinking vessel according to Claim 1, further characterised in that said valve means is integral with the lid (31, 31').

4. A drinking vessel according to Claims 1 or 3, further characterized in that the valve means is at the extreme end of the mouthpiece (32, 45, 51).
5. A drinking vessel according to any preceding claim, further characterised in that the lid (5, 5', 31, 31', 61, 49) is provided with an aperture (16, 16', 37, 43, 57) to allow for the ingress of air.
6. A drinking vessel according to Claim 5, further characterised in that said vessel is provided with additional valve means (17, 37, 47, 57) to prevent flow of liquid from the interior of the cup-shaped container through said aperture (16, 16', 37, 43, 57).
7. A drinking vessel according to both Claim 2 and Claim 6, further characterised in that both said valve means (18, 17) are provided on the same said valve member (10, 10') located in use between the lid (5, 5') and the cup-shaped container (2, 2').
8. A drinking vessel according to Claim 2 or any claim appendant thereto, further characterised in that said valve means comprises a dome-shaped region (14, 14') concave towards the interior of the cup-shaped container and underlying the mouthpiece (6), the dome-shaped region (14, 14') having a slit (18) therein defining the self-closing slit valve.
9. A drinking vessel according to Claim 7, further characterised in that said additional valve means (17) underlies said aperture (16, 16') and comprises a dome-shaped region (15, 15') convex towards the interior of the container and having a slit (17) to allow flow from the concave to the convex side but not in the opposite direction.
10. A drinking vessel according to Claim 2 or any claim appendant thereto, characterised in further comprising a support plate (20) to hold the valve member (1') in place beneath the lid.
11. A drinking vessel according to Claim 4, further characterised in that said valve means comprises a simple slit (35, 58) at the extreme end of the mouthpiece (32, 45, 51) defining said slit valve, which slit (35, 58) remains closed until suction is applied to the mouthpiece.
12. A drinking vessel according to Claim 4, further characterised in that said valve means comprises a series (34) of dome-shaped regions each having a slit (35) therein and being concave towards the interior of the vessel, each such slit defining a said slit valve.
13. A drinking vessel according to Claim 1, further

characterised in that said lid (49) has an aperture (50) large enough to accommodate said mouthpiece (51); said mouthpiece (51) has a flange (52) and said lid (49) has a disc (53), in operation to allow said flange (52) of said mouthpiece to be press-fitted over said disc and to be held in place by said disc (53); and said slit valve (58) is formed as a slit at the extreme end of said mouthpiece (51).

14. A drinking vessel according to Claim 13, further characterised in that said mouthpiece (51) has a straight sided portion (56) and a spout portion (55), said straight sided portion (56) having a dome-shaped region convex towards the interior of the container having a slit (57), effective to allow the ingress of air into the container as fluid is sucked out through the spout region (55) of said mouthpiece.
15. A drinking vessel suitable for use as a trainer cup or the like, comprising: an open-mouthed generally cup-shaped container (54); a lid (49) for the open-mouth of said cup-shaped container, the lid (49) having a mouthpiece (51) associated therewith; and valve means (58) associated with the lid and adapted to prevent flow of liquid from the interior of the container through the mouthpiece and to enable a user to draw liquid through the mouthpiece; the valve means (58) being adapted to open upon no more than a predetermined difference of pressure, greater within the vessel than outside, being present across said valve, whereby said valve means (58) prevents flow from the interior unless a predetermined level of suction is applied to the mouthpiece, and a user is enabled to draw liquid through the mouthpiece (51) by the application of suction thereto to provide said difference of pressure; characterised in that the lid (49) has an aperture (50) therethrough and a separate mouthpiece (51) formed of a flexible material, and having a circumextending flange (52), mounted at said aperture so that a distal portion (51) thereof protrudes outwardly of said lid (49), the extreme end of said mouthpiece (51) being provided with a self-closing slit valve (58) providing said valve means.

#### Patentansprüche

1. Trinkgefäß für die Verwendung als Schnabellasse oder ähnlichem bestehend aus einem im allgemeinen becherförmigen Gefäß (2, 2', 60, 54) mit Mundöffnung, einem Deckel (5, 5', 31, 31', 61, 49) für die Mundöffnung des becherförmigen Gefäßes, wobei der Deckel (5, 5', 31, 31', 61, 49) ein mit ihm verbundenes Mundstück (6, 32, 45, 51) aufweist, sowie ein mit dem Deckel verbundenes Ventilelement (1, 1', 31, 31', 42, 58), das so ausgelegt ist, um ein Ausströmen von Flüssigkeit aus dem

- Gefäßinneren durch das Mundstück zu verhindern und dem Benutzer zu ermöglichen, Flüssigkeit durch das Mundstück zu saugen, wobei das Ventilelement (1, 1', 31, 31', 42, 58) derart ausgelegt ist, daß es sich nur bei einem vorgegebenen Druckunterschied öffnet, der in dem Gefäß größer ist als außerhalb des Gefäßes und der an dem Ventil anliegt, wobei das Ventilelement (1, 1', 31, 31', 42, 58) ein Ausströmen aus dem Inneren solange verhindert, bis ein vorgegebenes Saugniveau an dem Mundstück erreicht ist und es einem Benutzer möglich ist, Flüssigkeit durch das Mundstück (6, 32, 45, 51) allein durch Saugen zu erhalten, wodurch der genannte Druckunterschied entsteht, dadurch gekennzeichnet, daß das Ventilelement (1, 1', 31, 31', 42, 58) ein selbstschließendes Schlitzventil (18, 35, 58) aufweist.
2. Trinkgefäß nach Anspruch 1, dadurch gekennzeichnet, daß das Ventilelement (1, 1', 42) ein getrenntes Ventilelement (10, 10', 42) zwischen dem becherförmigen Gefäß (2, 2', 60) und dem Deckel (5, 5', 61) ist.
  3. Trinkgefäß nach Anspruch 1, dadurch gekennzeichnet, daß das Ventilelement mit dem Deckel (31, 31,) ein Ganzes bildet.
  4. Trinkgefäß nach Anspruch 1 oder 3, dadurch gekennzeichnet, daß sich das Ventilelement an dem äußersten Ende des Mundstücks (32, 45, 51) befindet.
  5. Trinkgefäß nach einem der obigen Ansprüche, dadurch gekennzeichnet, daß der Deckel (5, 5', 31, 31', 61, 49) mit einer Öffnung (16, 16', 37, 43, 57) versehen ist, um das Eintreten von Luft zu ermöglichen.
  6. Trinkgefäß nach Anspruch 5, dadurch gekennzeichnet, daß das Gefäß mit einem zusätzlichen Ventilelement (17, 37, 47, 57) versehen ist, um ein Austreten der Flüssigkeit aus dem Inneren des becherförmigen Gefäßes durch die Öffnung (16, 16', 37, 43, 57) zu verhindern.
  7. Trinkgefäß nach Anspruch 2 und Anspruch 6, dadurch gekennzeichnet, daß sich beide Ventilelemente (18, 17) auf dem gleichen Ventilelement (10, 10') zwischen dem Deckel (5, 5') und dem becherförmigen Gefäß (2, 2') befinden.
  8. Trinkgefäß nach Anspruch 2 oder abhängig von einem der Ansprüche, dadurch gekennzeichnet, daß das Ventilelement einen kuppelförmigen, zum Inneren des becherförmigen Gefäßes konkav geformten Bereich (14, 14') unter dem Mundstück (6) aufweist, wobei der kuppelförmige Bereich (14, 14') mit einem Schlitz (18) versehen ist, der ein selbstschließendes Schlitzventil bildet.
  9. Trinkgefäß nach Anspruch 7, dadurch gekennzeichnet, daß sich das zusätzliche Ventilelement (17) unter der Öffnung (16, 16') befindet und einen kuppelförmigen, zum Inneren des Gefäßes konvex geformten Bereich (15, 15') und einen Schlitz (17) aufweist, um ein Fließen von der konkaven zu der konvexen Seite - jedoch nicht in umgekehrter Richtung - zu ermöglichen.
  10. Trinkgefäß nach Anspruch 2 oder abhängig von einem der Ansprüche, dadurch gekennzeichnet, daß eine Trägerplatte (20) zum Halten des Ventilelements (1') unter dem Deckel vorgesehen ist.
  11. Trinkgefäß nach Anspruch 4, dadurch gekennzeichnet, daß das Ventilelement einen einfachen, das Schlitzventil definierenden Schlitz (35, 58) am äußersten Ende des Mundstücks (32, 45, 51) aufweist, wobei der Schlitz (35, 58) solange geschlossen bleibt, bis an dem Mundstück gesogen wird.
  12. Trinkgefäß nach Anspruch 4, dadurch gekennzeichnet, daß das Ventilelement eine Reihe (34) von kuppelförmigen, zum Inneren des Gefäßes konkav geformten Bereichen mit je einem Schlitz (35) aufweist, wobei jeder Schlitz ein Schlitzventil definiert.
  13. Trinkgefäß nach Anspruch 1, dadurch gekennzeichnet, daß der Deckel (49) eine Öffnung (50) aufweist, die groß genug ist, um das Mundstück (51) aufzunehmen, wobei das Mundstück (51) einen Flansch (52) und der Deckel (49) eine Scheibe (53) aufweisen, so daß der Flansch (52) des Mundstücks über die Scheibe gedrückt werden kann und von der Scheibe (53) an Ort und Stelle gehalten wird, und wobei ferner das Schlitzventil (58) als Schlitz am äußersten Ende des Mundstücks (51) gebildet wird.
  14. Trinkgefäß nach Anspruch 13, dadurch gekennzeichnet, daß das Mundstück (51) einen geradwandigen Bereich (56) und einen Tüllenbereich (55) aufweist, wobei der geradwandige Bereich (56) einen kuppelförmigen, zum Inneren des Gefäßes konvex geformten Bereich aufweist und mit einem Schlitz (57) versehen ist, damit Luft in das Gefäß eindringen kann, wenn Flüssigkeit durch den Tüllenbereich (55) des Mundstücks gesogen wird.
  15. Trinkgefäß für die Verwendung als Schnabellasse oder ähnlichem bestehend aus einem im allgemeinen becherförmigen Gefäß (54) mit Mundöffnung, einem Deckel (49) für die Mundöffnung des becherförmigen Gefäßes, wobei der Deckel (49) ein mit

ihm verbundenes Mundstück (51) aufweist, sowie ein mit dem Deckel verbundenes Ventilelement (58), das so ausgelegt ist, um ein Ausströmen von Flüssigkeit aus dem Gefäßinneren durch das Mundstück zu verhindern und dem Benutzer zu ermöglichen, Flüssigkeit durch das Mundstück zu saugen, wobei das Ventilelement (58) derart ausgelegt ist, daß es sich nur bei einem vorgegebenen Druckunterschied öffnet, der in dem Gefäß größer ist als außerhalb des Gefäßes und der an dem Ventilelement anliegt, wobei das Ventilelement (58) ein Ausströmen aus dem Inneren solange verhindert, bis ein vorgegebenes Saugniveau an dem Mundstück erreicht ist und es einem Benutzer möglich ist, Flüssigkeit durch das Mundstück (51) allein durch Saugen zu erhalten, wodurch der genannte Druckunterschied entsteht, dadurch gekennzeichnet, daß der Deckel (49) eine Öffnung (50) und ein getrenntes Mundstück (51) aus einem flexiblen Material aufweist und mit einem Rundflansch (52) an der Öffnung versehen ist, so daß ein entfernt liegender Bereich (51) nach außen aus dem Deckel (49) hervorspringt, wobei das äußerste Ende des Mundstücks (51) mit einem selbstschließenden, das Ventilelement bildenden Schlitzventil (58) versehen ist.

#### Revendications

1. Un récipient à boire pouvant être utilisé comme gobelet à bec pour bébé ou autre, comprenant : un récipient à embouchure ouverte dont la forme est généralement celle d'un gobelet ; (2, 2', 60, 54) ; un couvercle (5, 5', 31, 31', 61, 49) pour l'embouchure ouverte dudit récipient en forme de gobelet, le couvercle (5, 5', 31, 31', 61, 49) présentant un élément de bouche (6, 32, 45, 51) associé à celui-ci ; et un moyen de soupape (1, 1', 31, 31', 42, 58) associé au couvercle et adapté pour empêcher l'écoulement de liquide depuis l'intérieur du récipient à travers l'élément de bouche et pour permettre à un utilisateur d'aspirer le liquide à travers l'élément de bouche, la configuration du moyen de soupape (1, 1', 31, 31', 42, 58) étant telle que ledit moyen de soupape est conçu pour s'ouvrir sous l'effet d'une différence de pression n'excédant pas une mesure prédéterminée, plus importante à l'intérieur du récipient qu'à l'extérieur, présente à travers ladite soupape, ledit moyen de soupape (1, 1', 31, 31', 42, 58) empêchant ce faisant l'écoulement depuis l'intérieur à moins qu'un degré prédéterminé de succion soit appliqué au niveau de l'élément de bouche, et un utilisateur est en mesure d'aspirer le liquide à travers l'élément de bouche (6, 32, 45, 51) par la seule application d'une succion au niveau de celui-ci pour provoquer ladite différence de pression ; caractérisé en ce que le moyen de soupape (1, 1', 31, 31', 42, 58) comprend une soupape à fente à

fermeture automatique (18, 35, 58).

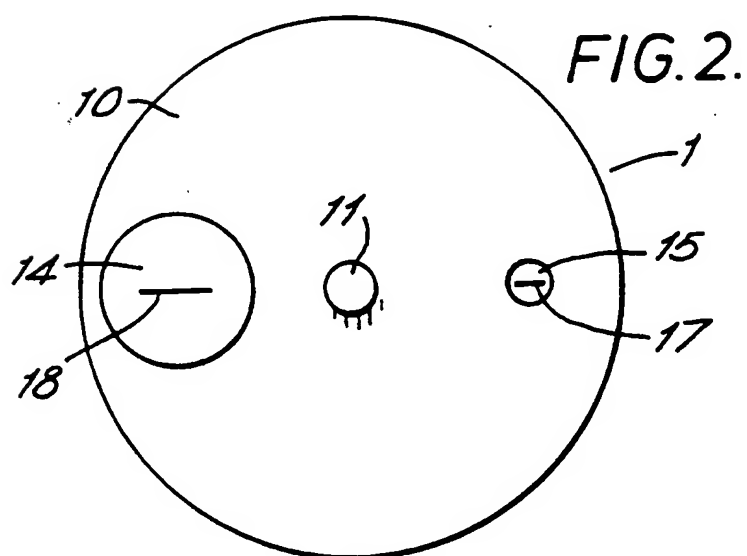
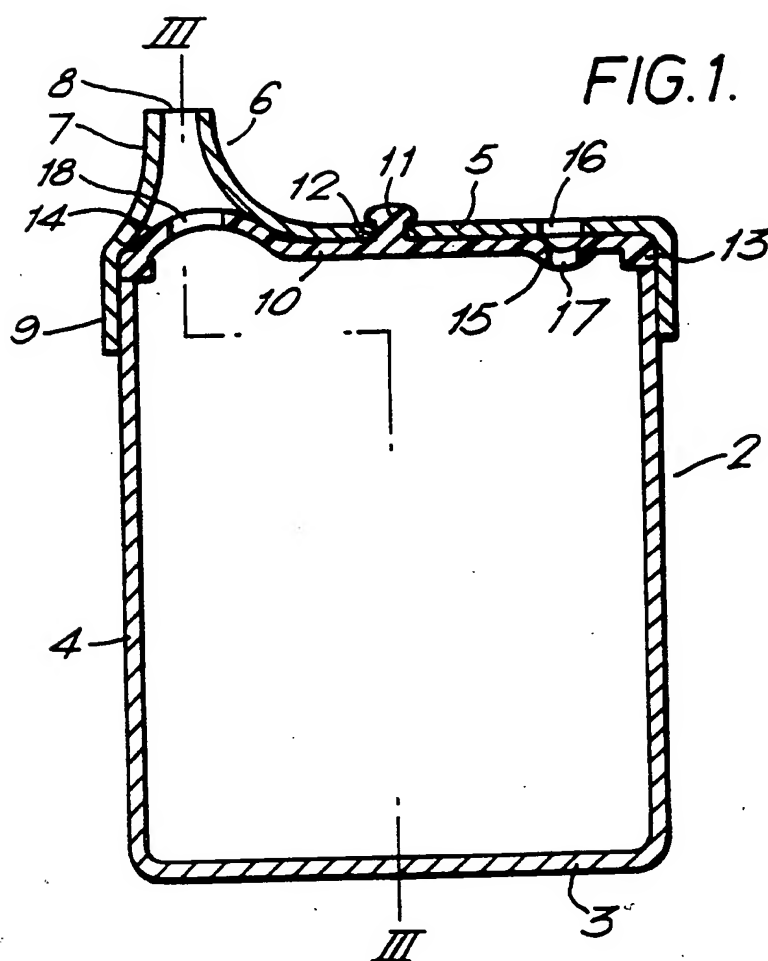
2. Un récipient à boire selon la revendication 1, caractérisé en outre en ce que ledit moyen de soupape (1, 1', 42) est un élément de soupape séparé (10, 10', 42) situé en cours d'utilisation entre le récipient en forme de gobelet (2, 2', 60) et le couvercle (5, 5', 61).
3. Un récipient à boire selon la revendication 1, caractérisé en outre en ce que ledit moyen de soupape fait partie intégrante du couvercle (31, 31').
4. Un récipient à boire selon la revendication 1 ou 3, caractérisé en outre en ce que le moyen de soupape est placé à l'extrémité extrême de l'élément de bouche (32, 45, 51).
5. Un récipient à boire selon l'une quelconque des revendications précédentes, caractérisé en outre en ce que le couvercle (5, 5', 31, 31', 61, 49) est doté d'une ouverture (16, 16', 37, 43, 57) pour permettre l'entrée d'air.
6. Un récipient à boire selon la revendication 5, caractérisé en outre en ce que ledit récipient comporte un moyen de soupape supplémentaire (17, 37, 47, 57) pour empêcher le flux de liquide provenant de l'intérieur du récipient en forme de gobelet à travers ladite ouverture (16, 16', 37, 43, 57).
7. Un récipient à boire selon les revendications 2 et 6, caractérisé en outre en ce que lesdits deux moyens de soupape (18, 17) sont prévus sur ledit même élément de soupape (10, 10') situé en cours d'utilisation entre le couvercle (5, 5') et le récipient en forme de gobelet (2, 2').
8. Un récipient à boire selon la revendication 2 ou toute revendication en dépendant, caractérisé en outre en ce que ledit moyen de soupape comporte une zone en forme de dôme (14, 14') concave vers l'intérieur du récipient en forme de gobelet et reposant sous l'élément de bouche (6), la zone en forme de dôme (14, 14') présentant à l'intérieur une fente (18) définissant la soupape à fente à fermeture automatique.
9. Un récipient à boire selon la revendication 7, caractérisé en outre en ce que ledit moyen de soupape supplémentaire (17) repose sous ladite ouverture (16, 16') et comporte une zone en forme de dôme (15, 15') convexe vers l'intérieur du récipient et présentant une fente (17) pour permettre un écoulement du côté concave vers le côté convexe, mais pas en sens inverse.
10. Un récipient à boire selon la revendication 2 ou



toute revendication en dépendant, caractérisé en outre en ce qu'il comporte une plaque support (20) pour maintenir en place l'élément de soupape (1') sous le couvercle.

11. Un récipient à boire selon la revendication 4, caractérisé en outre en ce que ledit élément de soupape comporte une fente simple (35, 58) à l'extrémité extrême de l'élément de bouche (32, 45, 51) définissant ladite soupape à fente, laquelle fente (35, 58) demeure fermée jusqu'à ce qu'une succion soit appliquée sur l'élément de bouche. 5
12. Un récipient à boire selon la revendication 4, caractérisé en outre en ce que ledit élément de soupape comporte une série de zones en forme de dômes (34), chacune présentant une fente (35) et étant concave vers l'intérieur du récipient, chacune de ces fentes définissant une dite soupape à fente. 10
13. Un récipient à boire selon la revendication 1, caractérisé en outre en ce que ledit couvercle (49) présente une ouverture (50) suffisamment large pour s'adapter au dit élément de bouche (51) ; ledit élément de bouche (51) comporte une bride (52) et ledit couvercle (49) présente un disque (53), pour permettre en cours d'utilisation à ladite bride (52) dudit élément de bouche d'être ajustée par pression sur ledit disque et d'être maintenue en place par ledit disque (53) ; et ladite soupape à fente (58) est formée comme une fente à l'extrémité extrême du dit élément de bouche (51). 15 20 25 30
14. Un récipient à boire selon la revendication 13, caractérisé en outre en ce que ledit élément de bouche (51) présente une portion de bord droit (56) et une portion de bec (55), ladite portion de bord droit (56) présentant une zone en forme de dôme convexe vers l'intérieur du récipient comportant une fente (57), efficace pour permettre l'entrée d'air à l'intérieur du récipient au moment où le fluide est aspiré à travers la zone de bec (55) dudit élément de bouche. 35 40
15. Un récipient à boire pouvant être utilisé comme gobelet à bec pour bébé ou autre, comprenant : un récipient à embouchure ouverte dont la forme est généralement celle d'un gobelet (54) ; le couvercle (49) pour l'embouchure ouverte dudit récipient en forme de gobelet présentant un élément de bouche (51) associé à celui-ci ; et un moyen de soupape (58) associé au couvercle et adapté pour empêcher l'écoulement de liquide depuis l'intérieur du récipient à travers l'élément de bouche et pour permettre à un utilisateur d'aspirer le liquide à travers l'élément de bouche ; le moyen de soupape (58) étant adapté pour s'ouvrir sous l'effet d'une différence de pression n'excédant pas une mesure pré- 45 50 55

déterminée, plus importante à l'intérieur du récipient qu'à l'extérieur, présente à travers ladite soupape, ledit moyen de soupape (58) empêchant ce faisant l'écoulement depuis l'intérieur à moins qu'un degré prédéterminé de succion soit appliqué au niveau de l'élément de bouche, et un utilisateur est en mesure d'aspirer le liquide à travers l'élément de bouche (51) par application d'une succion sur celui-ci pour provoquer ladite différence de pression ; caractérisé en ce que le couvercle (49) présente une ouverture (50) qui le traverse et un élément de bouche séparé (51) formé d'une matière flexible et présentant une bride (52) qui s'étend sur la périphérie, montée au niveau de ladite ouverture de sorte qu'une portion distale (51) de celle-ci fait saillie vers l'extérieur dudit couvercle (49) l'extrémité extrême dudit élément de bouche (51) étant dotée d'une soupape à fente à fermeture automatique (58) fournissant ledit moyen de soupape. 5



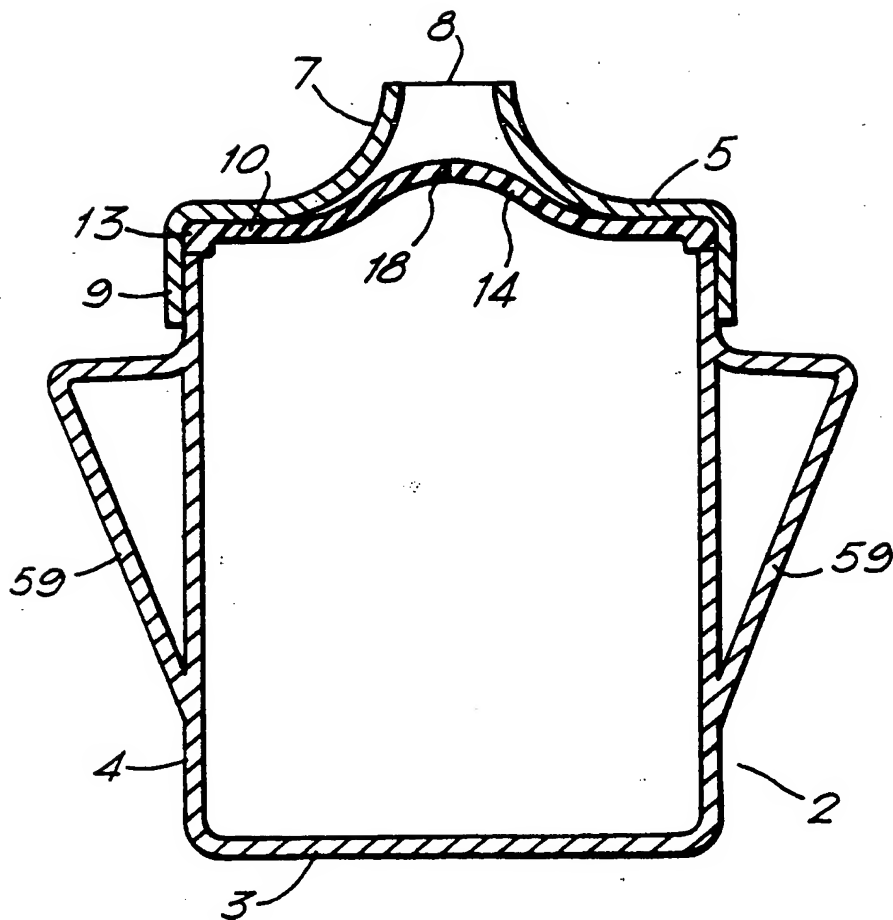


FIG.3.

FIG. 4.

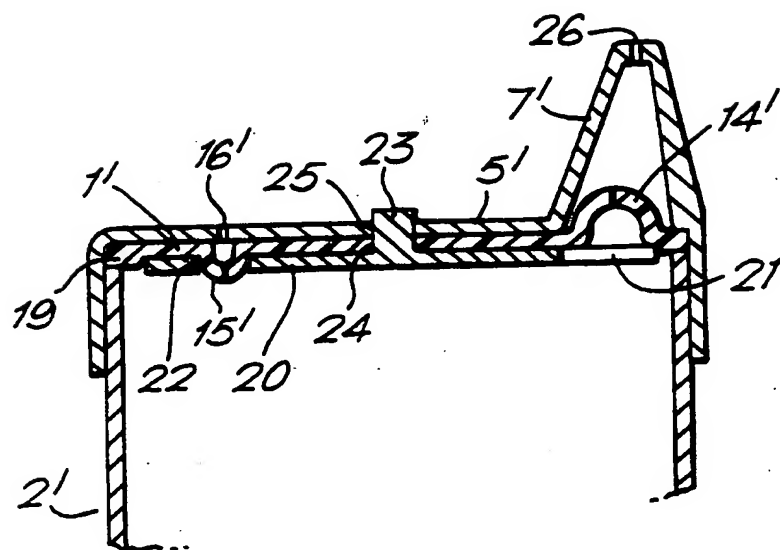
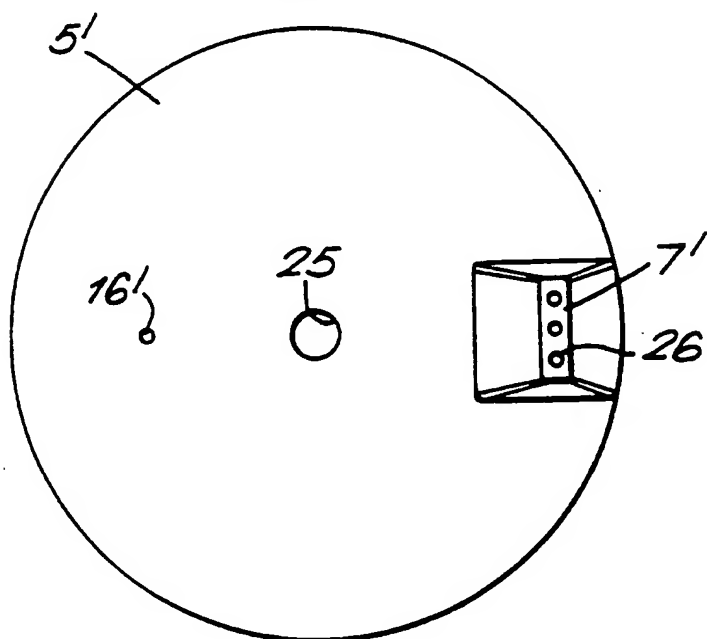


FIG. 5.



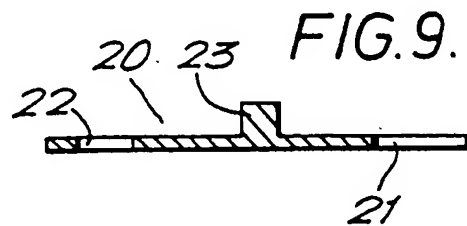
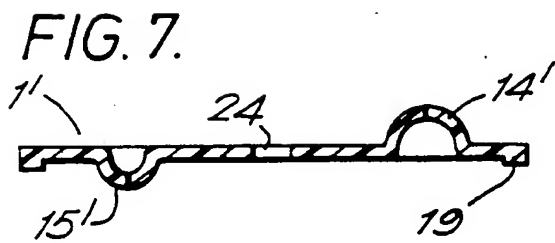
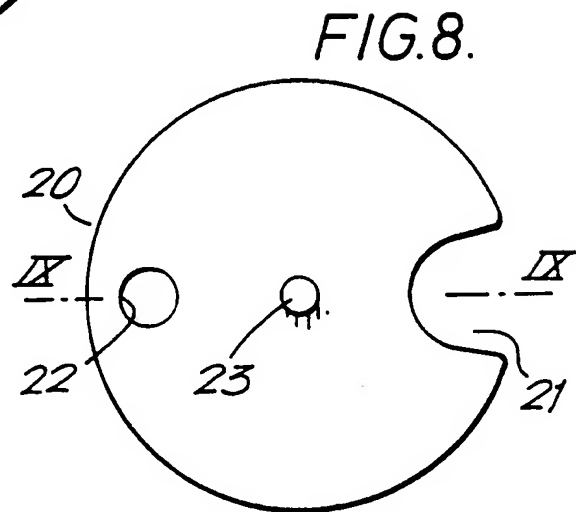
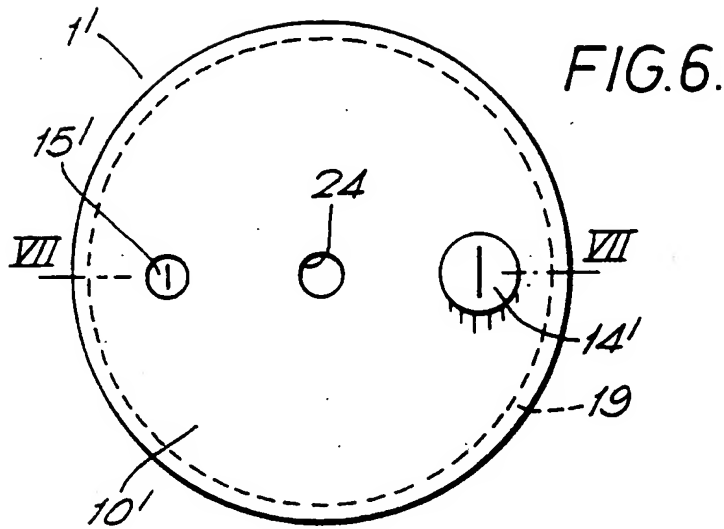


FIG.10.

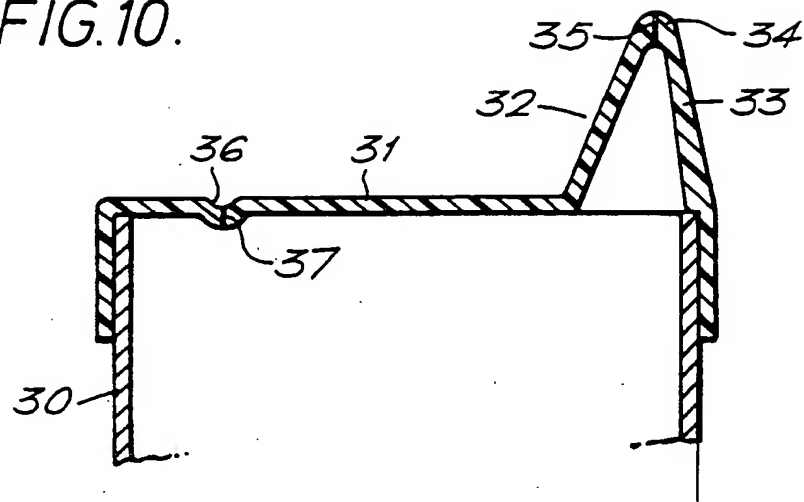


FIG.11.

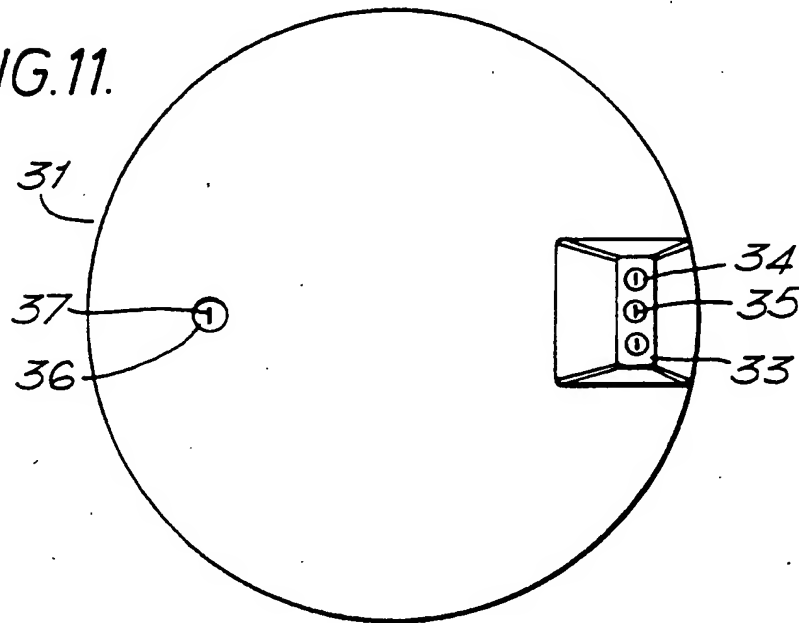


FIG.12.

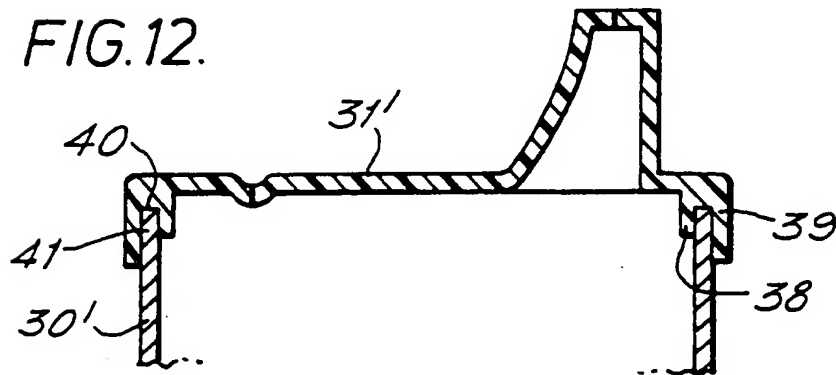


FIG.13.

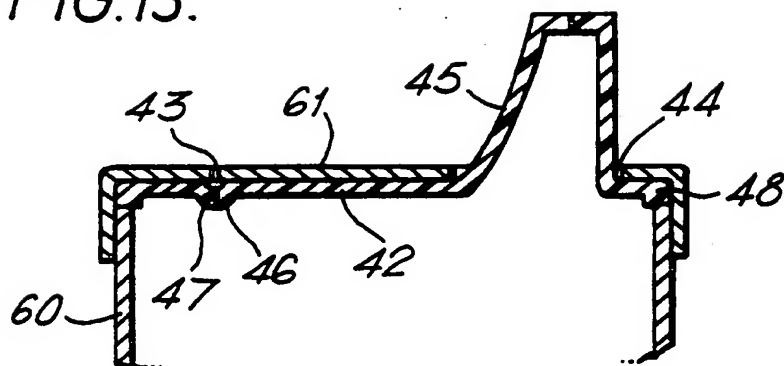


FIG.14.

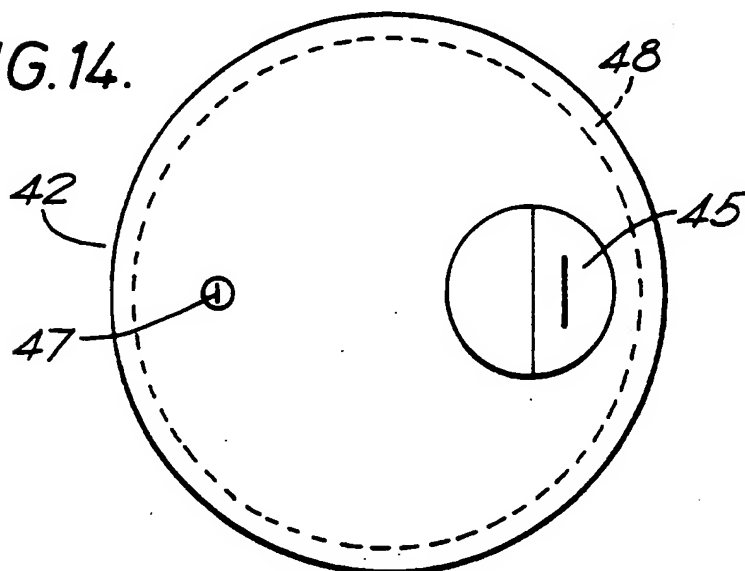


FIG.15.

